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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Henri-Louis Schwal

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EXAMINER

CERNOCH, STEVEN MICHAEL

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,401	Applicant(s) SCHWAL ET AL.	
	Examiner STEVEN CERNOCH	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 13 and 14 is withdrawn in view of the newly discovered reference(s) to Lubsen et al. (US Pat No 4,382,552). Rejections based on the newly cited reference(s) follow.

Drawings

The drawings are objected to because while the figures are presented clearly, the numerals labeled upon them are generally hard to decipher. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 13, 14 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Lubsen et al. (US Pat No 4,382,552).

Re claim 1, Lubsen et al. shows a nozzle (Fig. 1, 1) for spraying a liquid into the atmosphere, characterized in that it comprises: a secondary jet (Fig. 2, 5) connected to means (30) for supplying said liquid and including means (24) for effecting a first fractional distillation of said liquid and an expansion chamber (27); a principal jet (3) connected to means for generating a gaseous flow (col. 2, lines 5-7), including means (42) for effecting a second fractional distillation of said liquid and an outlet orifice (Fig. 1, 4) to the atmosphere; and means (Fig. 2, 13) for connecting said secondary jet to said principal jet, connecting the expansion chamber (45) and the means (42) for effecting the second fractional distillation of said liquid.

Re claim 2, Lubsen et al. shows that the secondary jet (Fig. 2, 5) is in the form of a cylinder, the central portion of which is occupied by the principal jet (3), which also has a cylindrical configuration, the annular cross-sectional space created thereby forming the expansion chamber (27).

Re claim 3, Lubsen et al. shows that the first and second fractional distillation means comprise a first and second Venturi (Fig. 2, 24, 42) respectively.

Re claim 4, Lubsen et al. shows that the first Venturi (Fig. 2, 24) comprises a tapering part (left of 26) followed by a calibrated cylindrical portion (26) terminating in the expansion chamber (27).

Re claim 5, Lubsen et al. shows that the tapering part (Fig. 2, left of 26) is in the form of a truncated cone, which is adapted to the calibrated cylindrical portion (26) through the intermediary of a bearing (23) so that the reduction in cross-section between the supply conduit (30) and the calibrated cylindrical portion (26) is discontinuous.

Re claim 6, Lubsen et al. shows that the calibrated cylindrical portion (Fig. 2, 26) terminates in the expansion chamber (27) in a recessed manner relative to the wall of said expansion chamber.

Re claim 7, Lubsen et al. shows that the second Venturi (Fig. 2, 42) includes a tapering part (left of 44) followed by a cylindrical portion (44) terminating in the atmosphere through the outlet orifice (Fig. 1, 4).

Re claim 8, Lubsen et al. shows that the means (Fig. 2, 13) for connection the secondary jet (5) to the principal jet (3) comprise a plurality of conduits (47) disposed radially between the expansion chamber (45) and the cylindrical portion (44) of the second Venturi.

Re claim 9, Lubsen et al. shows that the expansion chamber (Fig. 2, 45) has sudden variations in thickness along the longitudinal axis.

Re claim 10, Lubsen et al. shows that the expansion chamber (Fig. 2, 45) has the smallest thickness in the vicinity of the connection conduits (47).

Art Unit: 3752

Re claim 13, Lubsen et al. shows that said first fractional distillation means (Fig. 2, 24) for said liquid comprise two first Venturi (24, 29) terminating in the expansion chamber (27).

Re claim 14, Lubsen et al. shows that said first two Venturi (Fig. 2, 24, 29) each comprise a tapering part (left of 26, forward of 29) followed by a calibrated cylindrical portion (25, 26), said calibrated cylindrical portion having a different diameter for each first Venturi.

Re claim 21, Lubsen et al. does not show that it's for disinfecting premises used for medical, paramedical or food-processing purposes. However, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubsen et al. (US Pat No 4,382,552) as applied to claims 1-10, 13, 14 and 21 above, and further in view of Wanson et al. (FR 2,487,782).

Re claim 11, Lubsen et al. does not show that it additionally comprises means for affecting a third fractional distillation of said liquid.

However, Wanson et al. does teach a third fractional distillation of said liquid (Fig. 1, 7).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the third fractional distillation of Wanson et al. as use of fractional distillation is known in the art.

Re claim 12, Lubsen et al. does not show that said third fractional distillation means comprise an ultrasonic resonator and a resonance chamber connected to the outlet orifice in the axis of the principal jet.

However, Wanson et al. does teach that said third fractional distillation means comprise an ultrasonic resonator (Fig. 1, 5) and a resonance chamber (11) connected to the outlet orifice in the axis of the principal jet.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the chamber of Wanson et al. since ultrasonic resonance is known in the art.

Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubsen et al. (US Pat No 4,382,552) in view of Abplanalp et al. (US Pat No 6,062,493).

Re claim 15, Lubsen et al. shows an apparatus for spraying a liquid into the atmosphere (Fig. 1, 1), characterised in that it comprises: a spray nozzle (4); means (col. 2, 5-7) for supplying gas under pressure, said means being connected to the principal jet (Fig. 2, 3); means (47) for supplying liquid, said means including a reservoir (9) containing said liquid, the orifice (13) of which is connected to the secondary jet (5); and means (col. 1, lines 10-20) for checking and regulating the fluids.

Lubsen et al. does not teach gas under pressure but water under pressure.

However, Abplanalp et al. does teach gas under pressure col. 3, line 37).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the gas under pressure of Abplanalp et al. because switching out one fluid for another is known in the art.

Re claim 16, Lubsen et al. shows that the reservoir (Fig. 2, 9) is placed at a level such that the orifice (13) of said reservoir is lower than the spray nozzle (1).

Re claim 17, Lubsen et al. shows a method of spraying a liquid into the atmosphere, said method comprising steps which consist of: effecting a first fractional distillation (Fig. 2, 24) of said liquid by suction through a conduit (30), which has a first Venturi (24) terminating in an expansion chamber (27) which is subjected to a negative pressure; and effecting a second fractional distillation of said liquid by suction through

Art Unit: 3752

means (42) for connection to the expansion chamber (45) to a second Venturi (42) supplied by a gaseous flow under pressure.

Re claim 18, Lubsen et al. shows that the gas supply pressure of the second Venturi (Fig. 2, 42) is regulated (7) so that the pressure prevailing at the outlet (Fig. 1, 4) of said second Venturi is lower than the pressure prevailing in the expansion chamber (Fig. 2, 45).

Re claim 19, Lubsen et al. shows the claimed invention except that the pressure of the gaseous flow in the principal jet is between 2.5 bars and 3.5 bars, and the diameter of the calibrated cylindrical portion of the first venturi is between 0.3 mm and 1 mm, permitting the delivery of liquid 15 ml/min and 40 ml/min. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use said pressure and said diameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lubsen et al. (US Pat No 4,382,552) in view of Abplanalp et al. (US Pat No 6,062,493) as applied to claims 15-19 above, and further in view of Wanson et al. (FR 2,487,782).

Re claim 20, Lubsen et al. does not show that it additionally comprises means for affecting a third fractional distillation of said liquid.

However, Wanson et al. does teach a third fractional distillation of said liquid (Fig. 1, 7).

Art Unit: 3752

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the third fractional distillation of Wanson et al. as use of fractional distillation is known in the art.

Response to Arguments

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN CERNOCH whose telephone number is (571)270-3540. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571)272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3752

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. C./

Examiner, Art Unit 3752

/Len Tran/

Supervisory Patent Examiner, Art Unit 3752